

IN THE SPECIFICATION

Please replace paragraph [0027] at pages 16-17, with the following rewritten paragraph:

[0027]

FIGS. 4 show a first torque range where the first rotary shaft 1 has rotated in the counter-clockwise direction relative to the second rotary shaft 2 from the origin position of FIGS. 3 and where the magnetic poles 11a, 11b, 11c and 11d have been displaced to a rotation angle close to the angle position θ_a where the centers of the magnetic poles 14a and 14d are superposed. In this first torque range, the magnetic poles 11a, 11b, 11c and 11d have moved away from the angle position θ_b where the magnetic poles 14b and 14c are superposed, and are in a range close to the angle position θ_a where the magnetic poles 14a and 14d are superposed. FIG. 4(a) is a front view that is the same as FIG. 1(a) in this first torque range, and ~~FIG. 3(b)~~ FIG. 4(b) is similarly a cross-sectional view that is the same as FIG. 1(b) in the first torque range.

Please replace paragraph [0034] at pages 23-24, with the following rewritten paragraph:

[0034]

FIG. 6 shows part of a cross-sectional view in a plane including the common axial line L-L in regard to a state where the first rotary shaft 1 and the second rotary shaft 2 are slanted. Because the magnetic poles of the ring-shaped permanent magnet 6 are such that the outer periphery is an N pole and the inner periphery is an S pole, the direction of the magnetic flux is as like magnetic fluxes 16m, 16n, 16o, ~~[[16p,]]~~ 16p, 16q, 16r, 16s and 16t shown in FIG. 6. In a state where the axis is slanted as in FIG. 6, the magnetic fluxes 16m and 16t where the lengths of the spaces are small are the largest, and the magnetic fluxes 16p

and 16q where the lengths of the spaces are large are the smallest. However, because the magnetic flux passing through the magnetic sensor 15 in the axial direction along the common axial line L-L is dependent on the difference between the sum of the magnetic fluxes 16m, 16n, 16q and 16r and the sum of the magnetic fluxes 16o, 16p, 16s and 16t, the affect of the slanting of the first rotary shaft 1 and the second rotary shaft 2 becomes small.

Please replace paragraph [0038] at pages 26-27, with the following rewritten paragraph:

[0038]

Third Embodiment

FIG. 8 is a cross-sectional view showing a torque sensor according to a third embodiment of this invention. FIG. 8 shows, in regard to the third embodiment, a cross-sectional view resulting from a plane perpendicular to the common axial line L-L. In this third embodiment, plural plate-shaped or circular plate-shaped permanent magnet plates 17 are used instead of the radially oriented ring-shaped permanent magnet 6 in the first embodiment. Specifically, nine permanent magnet plates 17 magnetized in the radial direction are disposed at inner peripheral positions of the inner peripheral magnetic poles 11a and 11b. These permanent ~~magnets~~ magnetic plates 17 are disposed inside the intermediate cylinder 8 configured by magnetic material such as iron. The remaining construction is the same as that of the first embodiment.

Please replace paragraph [0041] at page 29, with the following rewritten paragraph:

[0041]

In the fourth embodiment of FIGS. 9, five plate-shaped or circular plate-shaped permanent ~~magnets~~ magnetic plates 17 are used on the inner periphery of the intermediate cylinder 8 to generate magnetomotive force in the radial direction. In this fourth embodiment, the inner peripheral magnetic poles 11a, 11b, 11c and 11d of the four magnetic field varying means 31, 32, 33 and 34 are configured by five protruding magnetic poles disposed in phases that are mutually the same at angle intervals of 72° . Further, in this fourth embodiment, five first beveled magnetic pole plates 18a are used instead of the outer peripheral magnetic poles 14a and 14c of the first embodiment, and five second beveled magnetic pole plates 18b are used instead of the outer peripheral magnetic poles 14b and 14d.

Please replace paragraph [0052] at pages 36-37, with the following rewritten paragraph:

[0052]

When torsional torque works between the first rotary shaft 1 and the second rotary shaft 2 and the relative angle changes, a detected magnetic flux flows between the outer peripheral cylinders ~~[[11a]]~~ 12a and 12b in the direction of the common axial line, but the detected magnetic flux flows to the magnetic sensor 15 via the fixed magnetic poles 19a and 19b. Because the direction and magnitude of the detected magnetic flux flowing through the magnetic sensor 15 change in response to the relative rotation angle between the rotary shafts 1 and 2 in the same manner as in the first embodiment, a bipolar output signal can be obtained from the magnetic sensor 15 in the same manner as in the first embodiment, and the torsional torque can be measured by detecting the output value of the magnetic sensor 15.

Please replace the subparagraph within paragraph [0052] lines 14-19 at page 37, with the following rewritten paragraph:

In this sixth embodiment also, the magnetic sensor 15 and the fixed ~~yokes~~ magnetic poles 19a and 19b are fixed with respect to an absolute space that does not move, whereby the sensor detection-use cable does not become tangled even when the second rotary shaft 2 rotates, and the durability of the magnetic sensor 15 is also improved.

Please replace the paragraph at page 46, lines 20-22, with the following rewritten paragraph:

[FIG. 5] A ~~front~~ cross-sectional view showing the flow of magnetic fluxes when an axial line of first and second rotary shafts has shifted in the torque sensor of the first embodiment.

Please replace the paragraph at page 47, lines 4-6, with the following rewritten paragraph:

[FIG. 8] A ~~front~~ cross-sectional view showing a torque sensor according to a third embodiment of this invention, with some parts being omitted.

Please replace the paragraph at page 48, lines 4-5, with the following rewritten paragraph:

[FIG. 15] A side view showing the ~~eighth~~ ninth embodiment of the torque sensor according to this invention.